

From: [DTRA Ft Belvoir RD Mailbox Reachback](#)
To: [Kondreck, Robert](#)
Cc: [DTRA Ft Belvoir RD Mailbox Reachback](#)
Subject: Material data safety data sheet
Date: Wednesday, January 11, 2023 7:44:23 PM
Attachments: [manganese-oxide-powder.png](#)
[MSDS Sheets_Manganese Dioxide_440_00.pdf](#)

Mr. Kondreck,
Please see attached for information and photos of manganese oxides. I hope this is helpful.

Respectfully,
Suzanne

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Manganese Oxide
Powder

MSDS # 440.00

Manganese (IV) Dioxide



Section 1: Product and Company Identification

Manganese (IV) Dioxide

Synonyms/General Names: Manganese dioxide, Manganese peroxide**Product Use:** For educational use only**Manufacturer:** Columbus Chemical Industries, Inc., Columbus, WI 53925.

24 Hour Emergency Information Telephone Numbers

CHEMTREC (USA): 800-424-9300**CANUTEC (Canada): 613-424-6666**

Scholar Chemistry; 5100 W. Henrietta Rd, Rochester, NY 14586; (866) 260-0501; www.Scholarchemistry.com

Section 2: Hazards Identification

*Silvery metallic appearance crystalline powder.***HMIS (0 to 4)**

Health	1
Fire Hazard	0
Reactivity	1

WARNING! Strong oxidizing agent and body tissue irritant.

Target organs: Respiratory system, central nervous system.

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Section 3: Composition / Information on Ingredients

Manganese Dioxide (1313-13-9), 89-92%

Section 4: First Aid Measures

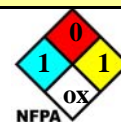
*Always seek professional medical attention after first aid measures are provided.***Eyes:** Immediately flush eyes with excess water for 15 minutes, lifting lower and upper eyelids occasionally.**Skin:** Immediately flush skin with excess water for 15 minutes while removing contaminated clothing.**Ingestion:** Call Poison Control immediately. Rinse mouth with cold water. Give victim 1-2 cups of water or milk to drink. Induce vomiting immediately.**Inhalation:** Remove to fresh air. If not breathing, give artificial respiration.

Section 5: Fire Fighting Measures

Strong Oxidizer. When heated to decomposition, emits acrid fumes.

Protective equipment and precautions for firefighters: Use foam or dry chemical to extinguish fire.

Firefighters should wear full fire fighting turn-out gear and respiratory protection (SCBA). Cool container with water spray. Material is not sensitive to mechanical impact or static discharge.



Section 6: Accidental Release Measures

Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Sweep up spill and place in sealed bag or container for disposal. Wash spill area after pickup is complete. See Section 13 for disposal information.

Section 7: Handling and Storage

Yellow**Handling:** Use with adequate ventilation and do not breathe dust or vapor. Avoid contact with skin, eyes, or clothing. Wash hands thoroughly after handling.**Storage:** Store in Oxidizer Storage Area [Yellow Storage] with other oxidizers and away from any combustible materials. Store in a cool, dry, well-ventilated, locked store room away from incompatible materials.

Section 8: Exposure Controls / Personal Protection

Use ventilation to keep airborne concentrations below exposure limits. Have approved eyewash facility, safety shower, and fire extinguishers readily available. Wear chemical splash goggles and chemical resistant clothing such as gloves and aprons. Wash hands thoroughly after handling material and before eating or drinking. Use NIOSH-approved respirator with a dust cartridge. Exposure guidelines: Manganese compounds as Mn: OSHA PEL: 5 mg/m³ ceiling, ACGIH: TLV: 0.2 mg/m³, STEL: N/A.

Section 9: Physical and Chemical Properties

Molecular formula	MnO ₂	Appearance	Silvery metallic, crystalline powder.
Molecular weight	86.94.	Odor	No odor.
Specific Gravity	5.02 g/mL @ 20°C.	Odor Threshold	N/A.
Vapor Density (air=1)	N/A.	Solubility	Soluble in hydrochloric acid .
Melting Point	535°C.	Evaporation rate	N/A. (Butyl acetate = 1).
Boiling Point/Range	Decomposes.	Partition Coefficient	N/A. (log P _{ow}).
Vapor Pressure (20°C)	N/A.	pH	N/A.
Flash Point:	N/A.	LEL	N/A.
Autoignition Temp.:	N/A.	UEL	N/A.

N/A = Not available or applicable

Section 10: Stability and Reactivity

Avoid heat and ignition sources.

Stability: Stable under normal conditions of use and storage.

Incompatibility: Reducing materials, organic materials, and oxidizable materials.

Shelf life: Fair shelf life, store in cool, dry environment.

Section 11: Toxicology Information

Acute Symptoms/Signs of exposure: *Eyes:* Redness, tearing, itching, burning, conjunctivitis. *Skin:* Redness, itching.

Ingestion: Irritation and burning sensations of mouth and throat, nausea, vomiting and abdominal pain. **Inhalation:** Irritation of mucous membranes, coughing, wheezing, shortness of breath,

Chronic Effects: No information found.

Sensitization: none expected

Manganese (II) Sulfate: LD50 [oral, rat]; N/A; LC50 [rat]; N/A; LD50 Dermal [rabbit]; N/A

Material has not been found to be a carcinogen nor produce genetic, reproductive, or developmental effects.

Section 12: Ecological Information

Ecotoxicity (aquatic and terrestrial): Contains a heavy metal – Toxic to terrestrial and aquatic plants and animals. Do not release to the environment

Section 13: Disposal Considerations

Check with all applicable local, regional, and national laws and regulations. Local regulations may be more stringent than regional or national regulations. Use a licensed chemical waste disposal firm for proper disposal.

Section 14: Transport Information

DOT Shipping Name: Not controlled by DOT.

Canada TDG: Not controlled by TDG.

DOT Hazard Class:

Hazard Class:

Identification Number:

UN Number:

Section 15: Regulatory Information

EINECS: Listed (215-202-6).

WHMIS Canada: C: Oxidizing, D2B: Toxic causing other toxic effects.

TSCA: All components are listed or are exempt.

California Proposition 65: Not listed.

The product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

Section 16: Other Information

Current Issue Date: January 23, 2009

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